MAIL-ORDER SYSTEM USING NETWORK AND MAIL-ORDERING METHOD THEREOF

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

5

The present invention relates to a mail-order system for making a purchase and a settlement of commodities using a computer through a public line such as the Internet and a method thereof, an Internet

10 connection system and a method thereof and, more particularly, to a system and a method suitable for the management of member identification information, a password and the like.

DESCRIPTION OF THE RELATED ART

15 One of conventional systems for electronic transactions of commodities by which purchase and settlement of commodities are made using a computer through a public line such as the Internet is a system disclosed in Japanese Patent Laying-Open No. 10-21305.

20 The system will be described with reference to Fig. 9.

In Fig. 9, with the system disclosed in Japanese Patent Laying-Open No. 10-21305, at the time of purchase, a purchaser of a commodity adds his or her own physical characteristic information and a search code for

25 searching the information to purchase information at a second information processing device 92 to transmit the obtained information to a third information processing

device 93 through an Internet 94. Then, the third
information processing device 93 determines whether
numbers of physical characteristic information stored to
have a state searchable by a search code in a storage

5   medium as information to be collated and the physical
characteristic information transmitted from the
purchaser coincide with each other or not and when they
coincide with each other, sends purchase information to
a first information processing device 91 on the

10   commodity dealing side. These procedures realize
electronic transactions of commodities.

In the above-described electronic commodity
transaction system, however, information on a purchaser
as a subject of transaction, that is, a member, needs to

15   be stored to have a state searchable by a search code in
a storage medium in the third information processing
device 93 as information to be collated.

Accordingly, when a new purchaser who wants to
start transactions appears or when stored physical

20   characteristic information disappears or becomes
unsearchable for some reason or other, electronic
commodity transactions might be impossible because there
exists no input means for such information other than
physical characteristic information inherent to a

25   purchaser as personal authentication information for
authenticating a member including member identification
information and a password.

SUMMARY OF THE INVENTION

An object of the present invention is, in order
to solve the above-described problems, to provide a
mail-order system enabling access to a server on the
side of a mail-order site through a network by using
personal authentication information for authenticating a
new purchaser as a member or, after the registration of
authentication information, authenticating the purchaser
as a member in response to application of physical
characteristics of the purchaser himself or herself, and
a mail-ordering method thereof.

According to the first aspect of the invention, a
mail-order system for members by which a member
purchases commodities by accessing a mail-order site
side server through a network using such personal
authentication information for authenticating a member
as member identification information and a password,
comprises

registration unit for registering physical
characteristics of each the member in advance, and

processing unit responsive to application of
physical characteristics by a purchaser for comparing
the applied physical characteristic information and the
physical characteristic information registered at the
registration unit to conduct authentication and
determining whether connection to the mail-order site

side server through the network is allowed or not according to authentication results.

In the preferred construction, the mail-order system further comprises a server for members for authenticating the member, wherein

the registration unit and the processing unit are provided at the server for members.

In another preferred construction, the mail-order system further comprises unit for enciphering the personal authentication information and the physical characteristic information so as to be in correlation with each other and registering the enciphered information at the registration unit, and reading and decoding the information enciphered.

In another preferred construction, the mail-order system further comprises unit for enciphering the personal authentication information and the physical characteristic information so as to be in correlation with each other and registering the enciphered information at the registration unit, and reading and decoding the information enciphered, wherein

the decoding unit decodes the personal authentication information when results of authentication of a purchaser's physical characteristics applied at the purchase of a commodity and the registered physical characteristics coincide with each other.

In another preferred construction, the mail-order
system further comprises unit for enciphering the
personal authentication information and the physical
characteristic information so as to be in correlation

5   with each other and registering the enciphered
information at the registration unit, and reading and
decoding the information enciphered, wherein

the decoding unit decodes the personal
authentication information when results of

10   authentication of a purchaser's physical characteristics
applied at the purchase of a commodity and the
registered physical characteristics coincide with each
other, and

the processing unit transmits the personal

15   authentication information decoded to the mail-order
site side server.

According to the second aspect of the invention,
a mail-order system for members by which a member makes
a settlement for mail-ordering by accessing a mail-order

20   settlement server through a network using such
authentication information for authenticating a card of
a member who makes a settlement for mail-ordering as
identification information and a password, comprises

registration unit for registering physical

25   characteristics of each the member in advance, and

processing unit responsive to application of
physical characteristics of one who makes a settlement

and to application of physical characteristics by a purchaser for comparing the applied physical characteristic information and the physical characteristic information registered at the registration unit to conduct authentication and determining whether connection to the mail-order settlement server through the network is allowed or not according to authentication results.

In the preferred construction, the mail-order system further comprises a server for members for authenticating the member, wherein

the registration unit and the processing unit are provided at the server for members.

In another preferred construction, the mail-order system further comprises unit for enciphering the personal authentication information and the physical characteristic information so as to be in correlation with each other and registering the enciphered information at the registration unit, and reading and decoding the information enciphered.

In another preferred construction, the mail-order system further comprises unit for enciphering the personal authentication information and the physical characteristic information so as to be in correlation with each other and registering the enciphered information at the registration unit, and reading and decoding the information enciphered, wherein

the decoding unit decodes the personal authentication information when results of authentication of physical characteristics of one who makes a settlement applied at the settlement of mail-

5 ordering and the registered physical characteristics coincide with each other.

In another preferred construction, the mail-order system further comprises unit for enciphering the personal authentication information and the physical

10 characteristic information so as to be in correlation with each other and registering the enciphered information at the registration unit, and reading and decoding the information enciphered, wherein

the decoding unit decodes the personal

15 authentication information when results of authentication of physical characteristics of one who makes a settlement applied at the settlement of mail-ordering and the registered physical characteristics coincide with each other, and

20 the processing unit transmits the personal authentication information decoded to the mail-order settlement server.

According to the third aspect of the invention, an Internet connection system enabling connection to at

25 least one of contracted providers by member's access to the Internet through a network using such personal authentication information for authenticating a member

as member identification information and a password, comprises

registration unit for registering physical characteristics of each the member in advance, and

5 processing unit responsive to application of physical characteristics by one who makes a connection for comparing the applied physical characteristic information and the physical characteristic information registered at the registration unit to conduct

10 authentication and determining whether connection to the provider through the network is allowed or not according to authentication results.

In the preferred construction, the Internet connection system further comprises a server for members

15 for authenticating the member, wherein

the registration unit and the processing unit are provided at the server for members.

In another preferred construction, the Internet connection system further comprises unit for enciphering

20 the personal authentication information and the physical characteristic information so as to be in correlation with each other and registering the enciphered information at the registration unit, and reading and decoding the information enciphered.

25 In another preferred construction, the Internet connection system further comprises unit for enciphering the personal authentication information and the physical

characteristic information so as to be in correlation with each other and registering the enciphered information at the registration unit, and reading and decoding the information enciphered, wherein

5 the decoding unit decodes the personal authentication information when results of authentication of physical characteristics of one who makes a connection applied at the connection and the registered physical characteristics coincide with each
10 other.

In another preferred construction, the Internet connection system further comprises unit for enciphering the personal authentication information and the physical characteristic information so as to be in correlation
15 with each other and registering the enciphered information at the registration unit, and reading and decoding the information enciphered, wherein

the decoding unit decodes the personal authentication information when results of
20 authentication of physical characteristics of one who makes a connection applied at the connection and the registered physical characteristics coincide with each other, and

the processing unit transmits the personal
25 authentication information decoded to the provider.

According to another aspect of the invention, a mail-ordering method for members by which a member

purchases commodities by accessing a mail-order site

side server through a network using such personal

authentication information for authenticating a member

as member identification information and a password,

5   comprising the steps of

registering physical characteristics of each the

member in advance, and

in response to application of physical

characteristics by a purchaser, comparing the applied

10   physical characteristic information and the physical

characteristic information registered at the

registration unit to conduct authentication and

determining whether connection to the mail-order site

side server through the network is allowed or not

15   according to authentication results.

In the preferred construction, the mail-ordering

method further comprising the step of

enciphering the personal authentication

information and the physical characteristic information

20   so as to be in correlation with each other and

registering the enciphered information at the

registration unit, and reading and decoding the

information enciphered.

In another preferred construction, the mail-

25   ordering method further comprising the step of

enciphering the personal authentication

information and the physical characteristic information

so as to be in correlation with each other and registering the enciphered information at the registration unit, and reading and decoding the information enciphered, wherein

5   the personal authentication information is decoded when results of authentication of a purchaser's physical characteristics applied at the purchase of a commodity and the registered physical characteristics coincide with each other.

10   In another preferred construction, the mail-ordering method further comprising the step of

enciphering the personal authentication information and the physical characteristic information so as to be in correlation with each other and

15   registering the enciphered information at the registration unit, and reading and decoding the information enciphered, wherein

the personal authentication information is decoded when results of authentication of a purchaser's

20   physical characteristics applied at the purchase of a commodity and the registered physical characteristics coincide with each other, and

the personal authentication information decoded is transmitted to the mail-order site side server.

25   According to another aspect of the invention, a mail-ordering method for members by which a member makes a settlement for mail-ordering by accessing a mail-order

settlement server through a network using such

authentication information for authenticating a card of

a member who makes a settlement for mail-ordering as

identification information and a password, comprising

5   the steps of

registering physical characteristics of each the

member in advance, and

in response to application of physical

characteristics of one who makes a settlement and to

10   application of physical characteristics by a purchaser

for comparing the applied physical characteristic

information and the physical characteristic information

registered at the registration unit to conduct

authentication and determining whether connection to the

15   mail-order settlement server through the network is

allowed or not according to authentication results.

In the preferred construction, the mail-ordering

method further comprising the step of

enciphering the personal authentication

20   information and the physical characteristic information

so as to be in correlation with each other and

registering the enciphered information at the

registration unit, and reading and decoding the

information enciphered.

25   In another preferred construction, the mail-

ordering method further comprising the step of

enciphering the personal authentication

information and the physical characteristic information so as to be in correlation with each other and registering the enciphered information at the registration unit, and reading and decoding the

5   information enciphered, wherein

the personal authentication information is decoded when results of authentication of physical characteristics of one who makes a settlement applied at the settlement of mail-ordering and the registered

10   physical characteristics coincide with each other.

In another preferred construction, the mail-ordering method further comprising the step of

enciphering the personal authentication information and the physical characteristic information

15   so as to be in correlation with each other and registering the enciphered information at the registration unit, and reading and decoding the information enciphered, wherein

the personal authentication information is

20   decoded when results of authentication of physical characteristics of one who makes a settlement applied at the settlement of mail-ordering and the registered physical characteristics coincide with each other, and

the personal authentication information decoded

25   is transmitted to the mail-order settlement server.

According to a further aspect of the invention, an Internet connection method enabling connection to at

least one of contracted providers by member's access to
the Internet through a network using such personal
authentication information for authenticating a member
as member identification information and a password,

5   comprising the steps of

registering physical characteristics of each the
member in advance, and

in response to application of physical
characteristics by one who makes a connection, comparing

10   the applied physical characteristic information and the
physical characteristic information registered at the
registration unit to conduct authentication and
determining whether connection to the provider through
the network is allowed or not according to

15   authentication results.

In the preferred construction, the Internet
connection method further comprising the step of

enciphering the personal authentication
information and the physical characteristic information

20   so as to be in correlation with each other and
registering the enciphered information at the
registration unit, and reading and decoding the
information enciphered.

In another preferred construction, the Internet

25   connection method further comprising the step of

enciphering the personal authentication
information and the physical characteristic information

so as to be in correlation with each other and registering the enciphered information at the registration unit, and reading and decoding the information enciphered, wherein

5   the personal authentication information is decoded when results of authentication of physical characteristics of one who makes a connection applied at the connection and the registered physical characteristics coincide with each other.

10   In another preferred construction, the Internet connection method further comprising the step of

enciphering the personal authentication information and the physical characteristic information so as to be in correlation with each other and

15   registering the enciphered information at the registration unit, and reading and decoding the information enciphered, wherein

the personal authentication information is decoded when results of authentication of physical

20   characteristics of one who makes a connection applied at the connection and the registered physical characteristics coincide with each other, and

the personal authentication information decoded is transmitted to the provider.

25   Other objects, features and advantages of the present invention will become clear from the detailed description given herebelow.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be understood more fully from the detailed description given herebelow and from the accompanying drawings of the preferred embodiment of the invention, which, however, should not be taken to be limitative to the invention, but are for explanation and understanding only.

In the drawings:

Fig. 1 is a diagram showing an example of setup of a mail-order system according to a first embodiment of the present invention;

Fig. 2 is a diagram showing an example of setup of a mail-order system according to a second embodiment of the present invention;

Fig. 3 is a diagram showing an example of setup of an Internet connection system according to a third embodiment of the present invention;

Fig. 4 is a flow chart for use in explaining processing to be conducted when personal authentication information and physical characteristic information are applied;

Fig. 5 is a flow chart for use in explaining processing to be conducted at the purchase of a commodity;

Fig. 6 is a diagram showing an example of arrangement of a personal authentication information

table and an encipherment table;

Fig. 7 is a diagram showing an example of display of a display unit of the present invention;

Fig. 8 is a diagram showing an another example of

5   display of a display unit of the present invention;

Fig. 9 is a diagram showing an example of setup of a conventional electronic commodity transaction system.

10   <u>DESCRIPTION OF THE PREFERRED EMBODIMENTS</u>

The preferred embodiment of the present invention will be discussed hereinafter in detail with reference to the accompanying drawings. In the following description, numerous specific details are set forth in

15   order to provide a thorough understanding of the present invention. It will be obvious, however, to those skilled in the art that the present invention may be practiced without these specific details. In other instance, well-known structures are not shown in detail in order to

20   unnecessary obscure the present invention.

With reference to Fig. 1, shown is an example of setup of a mail-order system as a first embodiment of the present invention. In Fig. 1, 100 denotes a user (member) side terminal and 105 denotes a server for

25   members for conducting management and authentication of member information, both of which are connected to an Internet network 111 through a communication interface

unit 110. A mail-order site side sever 112 or 113 is also connected to the Internet network 111. Moreover, the communication interface unit 110 and the Internet network 111 constitute a public line network.

5   Connected to the user side terminal 100 are a keyboard 101 for inputting personal authentication information of a member, a scanner 102 for inputting physical characteristics and the like of a member, an Internet connection software 103 and a display unit 104.

10   Connected to the server for members 105 are a temporary file 106 for storing member's personal authentication information, an information registration unit 107 for registering member's physical characteristics, an encipherment and decoding unit 108 for enciphering physical characteristic information and personal authentication information so as to be correlated with each other or decoding personal authentication information from applied physical characteristics and a processing unit 109 responsive to

20   application of physical characteristics for comparing the applied characteristics and registered information of the information registration unit 107 to conduct authentication and responsive to authentication results for allowing or not allowing connection to the mail-

25   order site side server 112 or 113 through the communication interface unit 110.

          Next, operation of the example of the system

setup shown in Fig. 1 will be described with reference to processing flows of Figs. 4 and 5. Fig. 4 shows a flow of processing to be conducted when personal authentication information and physical characteristic

5 information are input. In Fig. 4, a user (member) inputs such personal authentication information for authenticating a member as member identification information (ID) and a password (PW) through the keyboard 101 (Step S400). The input personal

10 authentication information is stored as such a personal authentication information table 601 as shown in Fig. 6 in the temporary file 106 for storing member's personal authentication information of the server for members 105 through the communication interface unit 110 (Step S401).

15 Next, the member inputs his or her own physical characteristics (e.g. finger print and palm print) through the scanner 102 (Step S402). Then, the input physical characteristic information PF is registered at the information registration unit 107 of the server for

20 members 105 (Step S403). Thereafter, the physical characteristic information PF and member's personal authentication information are enciphered in correlation with each other by the encipherment and decoding unit 108 (Step S404). Lastly, the enciphered data is stored

25 at the information registration unit 107 as such an encipherment table 602 as illustrated in Fig. 6 (Step S405).

Next, description will be made of Fig. 5 which
shows a flow of processing to be conducted when a member
purchases commodities. In Fig. 5, the member activates
the Internet connection software 103 through the

5   keyboard 101 (Step S500). Moreover, the member inputs an
URL (Uniform Resource Location) of a mail-order firm
from which purchase is made (Step S501).

As illustrated in Fig. 7, when an instruction is
displayed on the display unit 104 to, for example, input

10   a finger print as one of physical characteristics, the
member inputs his or her own finger print through the
scanner 102 (Step S502). In response to the input, the
processing unit 109 reads the encipherment table 602
registered at the information registration unit 107,

15   decodes physical characteristic information registered
by the encipherment and decoding unit 108 and compares
the registered physical characteristic information and
the input physical characteristic information to conduct
authentication thereof (Step S503).

20   When authentication results coincide with each
other, read the encipherment table 602 from the
information registration unit 107 and decode the
member's personal authentication information using the
encipherment and decoding unit 108 to store the

25   information in the temporary file 106 in the form of
such personal authentication information table 601 as
shown in Fig. 6 (Step S505). Also as shown in Fig. 8,

display the member identification information and the password as personal authentication information on the display unit 104. When at the processing at Step S503, if the authentication results fail to coincide with each
5   other, processing is finished (Step S504).

After Step S505, the processing unit 109 transmits the personal authentication information read from the temporary file 106 to the mail-order site side server 112 or 113 through the communication interface
10   unit 110 (Step S506). Then, the mail-order site side server 112 or 113 recognizes the personal authentication information to complete connection (Step S507).

Next, a second embodiment of the present invention will be described with reference to Fig. 2. As
15   the second embodiment of the present invention, illustrated in Fig. 2 is an example of setup of the mail-order system according to the present invention which is applied to a case where a settlement is made for mail-ordering, in which the common components to
20   those of Fig. 1 are given the same reference numerals. In Fig. 2, a user (member) inputs such authentication information for authenticating a card (credit card etc.) by which a settlement for mail-ordering is made as identification information and a password by using the
25   keyboard 101. The input card authentication information is stored in the temporary file 106 for storing card authentication information of a member of the server for

members 105 through the communication interface unit 110.

Next, the member inputs his or her own physical characteristics using the scanner 102. The input physical characteristic information is registered at the

5   information registration unit 107 of the server for members 105. Thereafter, the physical characteristic information is enciphered in correlation with the member's card authentication information by the encipherment and decoding unit 108 and stored in the

10   information registration unit 107.

When at the settlement for mail-ordering by the member, he or she inputs his or her own physical characteristics through the scanner 102, the processing unit 109, in response to the input, compares the

15   physical characteristic information with registered information in the information registration unit 107 to conduct authentication thereof and when the authentication results coincide with each other, decodes the member's card authentication information by means of

20   the encipherment and decoding unit 108 to connect to a settlement server 201 of the mail-order site which makes a settlement through the communication interface unit 110.

Next, a third embodiment of the present invention

25   will be described with reference to Fig. 3. As the third embodiment of the present invention, illustrated in Fig. 3 is an example of setup of the present invention

applied to an Internet connection system, in which the common components to those of Fig. 1 are given the same reference numerals. In Fig. 3, input such authentication information for authenticating a member of a provider as

5   member identification information and a password by using the keyboard 101. The input provider authentication information is stored in the temporary file 106 for storing provider authentication information of a member of the server for members 105 through the

10   communication interface unit 110.

Next, the member inputs his or her own physical characteristics using the scanner 102. The input physical characteristic information is registered at the information registration unit 107 of the server for

15   members 105. Thereafter, the physical characteristic information is enciphered in correlation with the member's provider authentication information by the encipherment and decoding unit 108 and stored in the information registration unit 107.

20   When connecting to one of a plurality of contracted providers, the member inputs his or her own physical characteristics through the scanner 102, whereby the processing unit 109, in response to the input, compares the physical characteristic information

25   with registered information in the information registration unit 107 to conduct authentication thereof and when the authentication results coincide with each

other, decodes the member's provider authentication
information by means of the encipherment and decoding
unit 108 and selects one of the providers 301 to 303 to
connect to the Internet network 111 through the
5   communication interface unit 110.

The system can be also structured such that in a
case where the authentication results coincide with each
other, at the display of such member's confirmation as
shown in Fig. 8, a member may be allowed to select any
10   of a plurality of providers. At this time, the
processing unit 109 selects a provider designated by a
member and connects the system to the selected provider.

As described in the foregoing, according to the
present invention, at the purchase or settlement of a
15   commodity by accessing a server on the side of a site
through a network, other than a method using such
personal authentication information for authenticating a
member or a user as member identification information
and a password, registering physical characteristic of
20   each member as physical characteristic information in
advance realizes a mail-order system using a network and
a method thereof by inputting member's own physical
characteristics even when the member forgets his or her
personal authentication information or loses his or her
25   own member card, or when the member forgets member
identification information and a password for a
settlement card or loses a settlement card.

In addition, according to the present invention, at the time of connection to one of a plurality of contracted providers, registering physical characteristics of each member as physical

5 characteristic information in advance, other than a method using such authentication information for authenticating a member of a provider as member identification information and a password, realizes an Internet connection system using a network and a method

10 thereof by inputting member's own physical characteristics even when he or she forgets his or her own personal authentication information.

Although the invention has been illustrated and described with respect to exemplary embodiment thereof,

15 it should be understood by those skilled in the art that the foregoing and various other changes, omissions and additions may be made therein and thereto, without departing from the spirit and scope of the present invention. Therefore, the present invention should not

20 be understood as limited to the specific embodiment set out above but to include all possible embodiments which can be embodies within a scope encompassed and equivalents thereof with respect to the feature set out in the appended claims.